Healthcare Improvement Scotland is committed to equality. We have assessed the review process for likely impact on equality protected characteristics as defined by age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, and sexual orientation (Equality Act 2010). You can request a copy of the equality impact assessment report from the Healthcare Improvement Scotland Equality and Diversity Advisor on 0141 225 6999 or email contactpublicinvolvement.his@nhs.net.
Contents

Acknowledgements ........................................................................................................... 4
Executive Summary ............................................................................................................ 5
Introduction ....................................................................................................................... 7
Section 1: About the Scottish AAA screening programme .................................................. 8
Section 2: Outcome of review ........................................................................................... 13
Appendix 1: AAA screening detailed participant pathway ................................................. 36
Appendix 2: Review group membership ............................................................................. 37
Appendix 3: Key recommendations ................................................................................... 38
Appendix 4: Glossary of terms .......................................................................................... 46
Acknowledgements

We would like to express our appreciation and recognition of the leadership and guidance provided to the review group throughout the lifetime of this programme of work by Tim Lees (Consultant Vascular Surgeon, NHS England) as Chair of the National Abdominal Aortic Aneurysm (AAA) Screening Review Group.

We would also like to express our sincerest gratitude to Margaret McAlees who was the administrator for this specific piece of work. Unfortunately, Margaret passed away earlier this year due to her illness. Her ongoing commitment and invaluable support was both recognised and acknowledged by the National AAA Screening Review Group, Healthcare Improvement Scotland and the Scottish Screening Committee.
Executive Summary

1. This review is an external quality assurance evaluation of abdominal aortic aneurysm (AAA) screening in Scotland undertaken by Healthcare Improvement Scotland and requested by the Scottish Government and the Scottish Screening Committee.

2. Since November 2013, all men residing in Scotland have been offered AAA screening at 65 years of age. The screening test is a single abdominal ultrasound scan. If an aneurysm is detected, men are monitored until treatment is required or immediately referred for treatment, depending on aortic diameter.

3. The aim of the screening programme is to reduce deaths from ruptured AAA.

4. The review group evaluated the overall performance of the national programme and that of individual programmes against 10 key standards. Local programmes were asked to undertake a self-assessment against the criteria set within the standards and this was considered alongside evidence from both local and national data. During the course of the review, it was necessary to request further data from local programmes relating to some of the standards.

5. In particular, the review demonstrated the following.
   a. In relation to defined arrangements for managing the AAA screening service and improvements within the AAA screening programme, the review group agreed there is a requirement to strengthen local governance with oversight from national governance via the national monitoring and evaluation group (MEG). This is reflected in the recommendations stated under criteria 1a.1 and 1a.2.
   b. The success of the programme relies on the skill and dedication of the screening workforce. The review group recognise that the screening workforce in Scotland is highly skilled and the success of the national programme relies on input from public health consultants, clinical leads and lead screeners.
   c. Time and resource constraints should be monitored and addressed. The review group recognise the limitations of time and resources to undertake these specific screening roles as highlighted in the recommendations for criteria 1a.3 and 1a.4.
   d. There are examples across the programmes of excellence in reducing inequalities and there is evidence to show that NHS boards make a great deal of effort to ensure that screening is accessible in order to support the equality portfolio of work. In addition, they contribute significantly to the reduction of health inequalities as reflected in the findings for Criterion 3a.2. Innovative work has been demonstrated in relation to addressing barriers to accessing the service and improving the methods of communicating information about the screening programme (which have been shared with other local programmes).
e. The review group found varying levels of outcome of quality assurance in relation to the ‘testing’ conducted by lead screeners as reflected in the findings for **Criterion 6b.2.** This variance could be caused by various factors and the existing governance structure of the national programme should carry out more research into who should specifically undertake a quality assurance management and improvement programme.

f. Innovative practice has also been demonstrated in local programmes in relation to monitoring, supporting, facilitating and evaluating effective communication between participants and lead screeners as reflected in the findings for **Criterion 3a.3.** The review group recommend the establishment of a forum for sharing good practice across the programme.

g. The review group agreed that the good practice demonstrated by some local programmes for **Criterion 7a.1** should be considered by the national AAA screening programme and rolled out across other local programmes in order to assist in determining whether ruptures could have been prevented or if false negatives have occurred. In particular, **Criterion 7a.2** should be considered with a view to including those men who have a ruptured AAA and survived as well as those men who died from a ruptured AAA.

h. It is vital for the screening programme to consider men who have been screened as negative and discharged from the programme who go on to suffer a ruptured AAA. When this happens it should be evaluated by programmes in order to assure themselves that an accurate measurement of the aorta was undertaken and to assess if there are any lessons to be learned from these events. Only one NHS collaborative, NHS Highland and NHS Western Isles (relating to the findings for **criteria 7a1 and 7a2**), undertook work to establish if this had happened and understand this further.

i. The review group found that many NHS boards/collaboratives did not meet **criteria 8a.2 and 9b.2** during the reporting period. These standards relate to the time from referral to assessment and time to treatment, which is important for men who have a large aneurysm. Data from the reporting period was of concern to the review group so further information was requested from NHS boards/collaboratives. The review group considered further data which indicated that NHS boards/collaboratives are working to address the issues and many are now meeting the targets relating to these standards. Considerable work has been undertaken by programmes to reduce this waiting time, and evidence provided demonstrated significant recent improvement. Ongoing monitoring and evaluation of these standards is required to ensure that men are seen in a timely fashion following referral to vascular services by the programme.

j. Uniformity of data collection of outcomes from AAA surgery is required by healthcare providers in order to ensure that mortality from AAA intervention is monitored.
Introduction

6. Screening for the presence of disease or medical condition is one of the most basic tools of modern public health and preventive medicine. A screening programme invites eligible, and usually healthy individuals, to be tested for a disease. This supports early detection so patients can be treated at the earliest possible opportunity in the hope of better outcomes.

7. Independent, external quality assurance of screening programmes is essential in quality monitoring and improvement. Therefore, the Scottish Government and the Scottish Screening Committee requested Healthcare Improvement Scotland to undertake external quality assurance reviews of screening programmes in Scotland.

8. Healthcare Improvement Scotland developed a methodology to review screening services, which was presented to the Scottish screening community and the Scottish Screening Committee during 2016. In order to test this methodology, we reviewed the Scottish AAA screening programme. This decision was taken due to the following reasons:

- the screening programme was available in all Health boards by November 2013 and this provided an easily defined time period for review
- there were existing up-to-date clinical standards for the programme
- as a new screening programme, a review would provide a good opportunity to evaluate how the programme was progressing, and
- the findings would add to existing quality monitoring arrangements which could provide possible recommendations for improvement.

9. Although screening tries to minimise harm as a result of detecting disease early by actively inviting healthy populations to undertake diagnostic tests, it does have the potential to cause (unintended) harm. It is recognised that for a screening programme to be truly effective, steps must be taken to ensure the potential for harm is minimised and addressed. For example, a false positive result in a screening programme can lead to distress and unnecessary further testing.

10. It is vital systems are in place to support the provision of high quality screening and ensure the associated risks are minimised for everyone taking part in Scottish screening programmes. The Scottish Government recognises these risks and consequently has taken steps to increase and improve quality monitoring in screening through the Scottish Screening Committee.

11. The Scottish Screening Committee is a strategic group comprised of key stakeholders across public health screening programmes in Scotland. This group provide national governance for screening in Scotland and provide screening policy advice for Scottish Government and Scottish Ministers.
Section 1: About the Scottish AAA screening programme

12. Since November 2013, all men residing in Scotland have been offered AAA screening at 65 years of age. The programme invites 65 year old men to attend an appointment to have a one-off ultrasound examination which measures the diameter of the aorta, a major artery in the abdomen. The test identifies whether a man has an aneurysm, which is a widening of the walls of the aorta. If an aneurysm is present then men are either monitored until treatment is required or immediately referred for treatment. Diagram 1 provides an overview of the participant pathway.

Diagram 1: High level overview of AAA screening pathway for participants

13. The aim of the programme is to identify men who have an aneurysm and ensure that treatment is provided when clinically appropriate, in order to reduce the rate of ruptures. A ruptured aneurysm can be life threatening and 80% of men who rupture within the community are likely to die.\(^2\) It is much safer for men to have their aneurysm treated electively, in a planned procedure, using either open surgical repair or endovascular repair (EVAR) which uses a stent graft, but these also carry some degree of risk.

\(^1\) www.healthscotland.com/uploads/documents/20207-AAAScreeningBriefingSheet.pdf
14. The AAA clinical guideline criterion which apply to every male in Scotland are as follows.

- Men who have an aorta measuring less than 3.0cm are discharged from the programme and are not screened again as it is unlikely that they will go on to develop an aneurysm.
- Men whose aorta measures 3.0cm to 4.4cm are invited to attend annual surveillance appointments so that the growth of the aneurysm can be monitored.
- Men who have an aneurysm measuring 4.5cm to 5.4cm are invited to attend 3-monthly surveillance appointments.
- Men who have an aneurysm measuring 5.5cm or more are immediately referred for assessment for treatment.

15. It is estimated that 1 in 20 men aged 65 in Scotland will be identified as having an aneurysm\(^3\) and that 170 lives or more will be saved each year once a point is reached when all men older than 65 years have been offered screening. This represents many more years of life added to the male Scottish population.\(^4\)

16. AAA screening in Scotland is delivered by local programmes, some of which are collaborative groupings of NHS boards:

- NHS Lothian and NHS Borders collaborative
- NHS Greater Glasgow and Clyde
- NHS Lanarkshire
- NHS Forth Valley
- NHS Grampian, NHS Orkney and NHS Shetland collaborative
- NHS Highland and NHS Western Isles collaborative
- NHS Dumfries & Galloway
- NHS Ayrshire & Arran, and
- NHS Fife and NHS Tayside collaborative.

17. Each local programme has a screening office which comprises:

- call/recall staff
- screeners who undertake the screening test and who have an appointed lead screener, and
- a lead clinician, who is usually a vascular surgeon.

18. In addition to this, each programme is overseen by a board screening co-ordinator, who is a consultant in public health.

---

\(^3\) [www.nhsaaa.net/media/351864/20151019aaas.pdf](http://www.nhsaaa.net/media/351864/20151019aaas.pdf)

\(^4\) [www.gov.scot/Topics/Health/Services/Screening/Abdominal-Aortic-Aneurysm](http://www.gov.scot/Topics/Health/Services/Screening/Abdominal-Aortic-Aneurysm)
19. Each local programme has an identified vascular referral pathway so that men who are identified as having an aneurysm are sent to an agreed unit which should meet the AAA screening programme clinical standards.\(^5\) This is important for two reasons:

- men who have an aneurysm should be treated in a timely manner, as abdominal aortic aneurysms continue to grow and the risk of rupture increases as the size of the aneurysm increases\(^6\), and
- elective treatment of an aneurysm has an associated mortality risk, thus it is important that outcomes of intervention are closely monitored.

20. Although screening is organised and delivered by local programmes, some components are delivered at a national level by NHS National Services Scotland (NSS). A national call/recall AAA IT system is in place and co-ordinated nationally in parallel to the governance structures of the programme. These are pivotal in the ongoing monitoring of quality and performance.

The AAA screening clinical standards

21. In 2011, the clinical standards for AAA screening were published, following development by an expert panel and a formal 12-week consultation. The standards provide the AAA screening programme with essential targets which all NHS boards/collaboratives are expected to meet and outline what is expected to be delivered along the participant pathway. In addition to this, they also act as a benchmark of the screening pathway quality and there is an expectation that all local programmes deliver the service in line with the standards.

22. In order to monitor quality, local programmes should routinely consider data against the standards as well as national key performance indicator data from Information Services Division (ISD), NSS. Key performance indicators for the programme were developed before the programme implementation and aim to improve understanding of how effectively the overall programme is performing across the participant pathway. This is achieved by setting a measurable value against an area where there is a desire to achieve a key objective. For example, in the AAA screening programme it is important that at least 70% of men who are invited for screening attend, otherwise the benefits of the screening programme will not be fully realised. In order to ensure key performance indicators are met, it is necessary for performance to be monitored and understood. In turn this will allow necessary improvements to be made in order for the performance of programmes to be maximised.\(^7\)

\(^{5}\) [www.healthcareimprovementscotland.org/our_work/cardiovascular_disease/screening_for_aaa/aaa_screening_standards](www.healthcareimprovementscotland.org/our_work/cardiovascular_disease/screening_for_aaa/aaa_screening_standards)


Overview of the external review process

23. Healthcare Improvement Scotland convened an expert review group in order to understand the performance and quality of the AAA screening programme. The review group included representation from the professional groups involved in the delivery of each portion of the participant pathway (Appendix 1): call/recall screening management, sonography, vascular surgery and public health expertise. The review was chaired by a vascular surgeon from NHS England, independent of NHSScotland. Appendix 2 contains the full review group membership list.

24. The review group asked local programmes to undertake a self-assessment against the AAA screening standards, which was submitted to Healthcare Improvement Scotland during February 2017. The self-assessment allowed local programmes to provide a narrative position against each of the criterion related to the standards, indicating whether they were compliant or not.

25. In order to fully demonstrate the position of AAA screening across Scotland, returns included evidence to support the self-assessment. Submissions also included evidence that ‘failsafe mechanisms’ within the programme pathway were being used and adhered to. Failsafe mechanisms are required at specific points along the participant pathway, where inherent risk lies, for example the point at which men with a large aneurysm are referred into vascular services (Diagram 2). This part of the pathway could require a failsafe mechanism to ensure that the referral is sent and received. A system of sending receipts for referrals could be used as a failsafe, confirming that each referral is received. It is important to note that sometimes the requirement for a failsafe mechanism can be highlighted when something unintended happens.
Diagram 2: Representation of failsafe mechanism in action as a specific point in the screening pathway for participants

26. National data relating to the governance structure and performance of the Scottish AAA screening programme was submitted to the review group by the national AAA screening programme, facilitated by NSS. This further supported data submitted by local programmes.

27. This information provided the foundation of the review, as it presented a baseline overview of services, and was considered in detail by all members of the review group. The review group met twice during the review process to discuss and consider the data and submission of written analysis/narratives in line with the standards. These discussions allowed the group to draw meaningful conclusions and make recommendations where required.

28. In addition to the review meetings, a subgroup of the review group met to discuss additional vascular data submitted to the review following direct request from the review group. This was intended to provide the review with the most up-to-date position of vascular services caring for men referred from the programme, and covered a reporting period of April 2016 to February 2017. This allowed the review group to make meaningful recommendations for improvement.
Section 2: Outcome of review

29. This report reflects the information provided to the review group by local programmes and provides the findings, conclusions and recommendations of the review group. Each member of the review group considered the data submitted by local programmes, agreed if each criterion was met, and provided key recommendations.

30. The review group acknowledge that these recommendations are likely to be of benefit to other screening programmes in Scotland and would request that the Scottish Government review of screening in Scotland considers this document as part of its work.

31. The review group expect that both local programmes and the national overarching programme should consider the recommendations made within this report and seek to address them using improvement methodology where applicable.

32. Healthcare Improvement Scotland will request a report on progress from each of the nine local AAA screening programmes (NHS boards/collaboratives), to be submitted 3 months after publication of this report. However, the review group made a number of recommendations against criteria 8a.2 and 9b.2 which will require local AAA screening programmes to submit a further update to Healthcare Improvement Scotland 6 weeks following publication of this report. This is due to the nature of the recommendations, as men who have an AAA should access assessment and treatment in a timely manner.

33. We would like to extend our thanks to the NHS boards, NSS and local AAA screening programmes for their timely submission of evidence, provision of supplementary information and attendance of representatives at the review group meetings.

The findings and recommendations

34. The review group set out a number of recommendations in this report for local programmes and the national overarching programme to help to improve the quality and the wider governance arrangements for the AAA screening programme in Scotland.

35. While the recommendations are specific to this review, they should be supported with ‘doing things better’ by using methods to assist with improvements and applied where appropriate, across other Scottish screening programmes.

36. All of the review group’s recommendations and related criteria are documented in Appendix 3.
Standard 1 – Governance arrangements

1a.1 There are clearly defined arrangements for managing the AAA screening service within each collaborative screening centre, with clear lines of accountability to NHS boards/collaborative.

Findings
The review group found that whilst all local programmes have defined arrangements in relation to this criterion, local governance processes should be strengthened to make sure that the screening programme and its performance is regularly monitored.

- There are local governance structures for each collaborative programme, making each one compliant with this criterion. However, the evidence within the self-assessment returns, such as minutes of meetings, does not support the assertion that NHS board clinical governance groups have robust or regular oversight of screening issues or undertake close regular monitoring of screening programmes.
- While screening governance structures are in place, the delivery of an effective screening service is reliant on the availability of public health consultant resource. There is an indication from the evidence returns and the national evidence provided that public health consultant time may be under-resourced in NHS boards and this could adversely impact on their ability to support ongoing governance of local programmes.
- There is concern from the review that governance arrangements for vascular referral pathways arising from the programme were unclear and that ongoing monitoring of vascular outcomes is not consistent.

1a.2 Processes within the AAA screening programme are reviewed, and any areas in the programme which require improvement are identified and addressed.

Findings
The review group found that the AAA screening programme has a national governance structure which has a role in overseeing and monitoring the quality of the programme. However, the review group found that improvement monitoring and action planning for the local programmes should be strengthened via the national governance groups and that local groups tasked with overseeing improvements should meet regularly.

- A national governance structure is in place for the AAA screening programme, and this includes a national monitoring and evaluation group which considers the ongoing performance of the programme. However, the review group heard that full membership of this group is often not possible because of resource constraints.
- The importance of the national governance structure and the groups within it is recognised, and that quality assurance functions can only be fully undertaken if members are supported to contribute to the national programme. Local programmes should make every effort to ensure staff are supported in engaging with the national programme, in particular key governance groups.
- The data submitted to the review group did not robustly demonstrate that action planning is, or has been, taking place within local programmes when an issue is identified. It is also unclear how this is overseen through an NHS board’s lines of
governance accountability. It is important for local and national governance groups to consider action plans for improvement from programmes on a regular basis.

- There is evidence that local programme governance groups are meeting regularly to consider screening data. However, two programmes have been identified by the review group as requiring more frequent governance meetings.
- There is concern from the review group that each self-assessment and evidence return noted issues with the AAA call/recall IT system which impacted on ongoing governance and reporting. Although this is not within the scope/remit of the AAA screening programme review, the review group heard that arrangements to approve and fund changes to screening systems may potentially cause some challenges and risks for effective screening programme governance. Important changes to the system may not always be made because of the methods used to prioritise and approve changes at a national level.

1a.3 There is a designated consultant in public health medicine or registered specialist in public health acting as the AAA screening co-ordinator for the NHS board/collaborative.

Findings
The review group found that all local programmes have an identified consultant in public health overseeing the programmes.

- Evidence showed that each screening programme has a designated consultant in public health.
- The review group recognise the importance of this role and the necessary time commitment it requires. As a result, the group agreed that job plans must have protected and dedicated time to allow staff to fulfil this role.
- Consultants in public health help drive national improvements through their membership of national programme groups. The role is integral to the ongoing delivery of the national AAA screening programme and vital for maintaining safe and effective screening.
- The review group appreciate the valuable contribution that public health consultants make to screening programmes at both a local and national level. The group recognise that this role is pivotal to the delivery of safe, effective and quality screening programmes and thus recommend that there is adequate resource available to support this function.

1a.4 There is a designated lead clinician for each NHS board/collaborative.

Findings
The review group found that all local programmes have a lead clinician.

- All local programmes have an identified AAA screening lead clinician, who is usually a vascular surgeon. However, the review group note that the evidence submitted to the review group did not clearly demonstrate the role, how the role was being undertaken and its links to governance of the programme.
- While the review indicates that this criterion is met, evidence suggests not all AAA screening lead clinicians are fully engaging with either the national AAA screening programme or the national lead clinicians group. The national lead clinicians group provides a forum for lead clinicians to come together to discuss local programmes and
has an important role in monitoring the quality of the programme. It is vital that lead clinicians engage with the national programme.

- There is concern that evidence suggests a lack of defined arrangements to support involvement from some lead clinicians in local governance of screening programmes.
- The review group recognise the importance of the lead clinician role in local programmes, such as assuring referral pathways and the management of surveillance screening participants. The review group agreed that:
  - lead clinicians’ job plans should include protected time for the role
  - job plans should include time to participate in national groups, and
  - the expectations of the role should be reviewed so that the role is the same across all local screening programmes.

1b.1 Each NHS board/collaborative has a multidisciplinary AAA screening co-ordinating group, with public representation, that meets at least annually to review local performance data and address quality assurance recommendations.

Findings
The review group found that not all local programmes have a multidisciplinary group which included public representation, and three programmes could not demonstrate that there are ongoing yearly meetings.

- Evidence shows that although there is a general compliance with this criterion, the frequency and membership of multidisciplinary co-ordinating groups should be strengthened. For example:
  - evidence from NHS Lothian and NHS Borders collaborative, NHS Fife and NHS Tayside collaborative, and NHS Dumfries & Galloway, and NHS Grampian, NHS Orkney and NHS Shetland collaborative did not demonstrate that their co-ordinating groups met at least once a year
  - most of the co-ordinating groups did not have representation from a member of the public, and
  - lead clinicians did not always attend co-ordinating group meetings.
- As the screening programme matures, the consistency and frequency of the groups should be improved.

1b.2 There is a mechanism to identify all men eligible for an invitation to attend AAA screening.

1b.3 There are clearly defined arrangements for the management of eligible participants in the AAA screening programme.

Findings
The review group found that all the AAA screening programmes have a mechanism to identify the eligible population and that local programmes all have arrangements to manage the cohort of participants, meeting both standards

- The screening programme uses a national call/recall AAA IT system which identifies eligible participants using the community health index (CHI). The review group agreed that this meets Criterion 1b.2.
- National data, submitted by NSS, demonstrates robust compliance with Criterion 1b.3.
The evidence demonstrates the call of eligible participants to screening and the recall of participants identified as having an aneurysm. The review group found evidence of call/recall managers having regular meetings to discuss processes within the programme and any arising issues.

Recommendations for Standard 1

<table>
<thead>
<tr>
<th>The national AAA screening programme:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• National governance groups should monitor action plans as part of their ongoing quality monitoring role.</td>
</tr>
<tr>
<td>• The national programme, through its existing governance groups/structures should consider and examine whether there is resource for public health consultants to deliver the AAA screening programme at a local level.</td>
</tr>
<tr>
<td>• National Services Division should provide clarity on the role and remit of the clinical lead.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Scottish Screening Committee:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The Scottish Screening Committee should clarify and confirm its process, role and remit, within the programmes’ governance structures, in order to provide the appropriate oversight, support and advice when risks, issues or concerns are raised or escalated.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Local AAA screening programmes (NHS boards/collaboratives):</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Local AAA screening programmes within NHSScotland must ensure there are robust governance and monitoring arrangements, and that chief executives are assured of the mechanisms used to govern the programme.</td>
</tr>
<tr>
<td>• Local governance committees should increase the frequency of governance meetings and regularly review action plans and annual reports in order to ensure implementation of actions for improvement.</td>
</tr>
<tr>
<td>• Public health consultants, clinical leads and lead screeners should be given time and resource to support the AAA screening governance structure fully. Local programmes should ensure that job plans include protected time to support the AAA screening programme.</td>
</tr>
<tr>
<td>• Local programmes should ensure that there is public representation on the multidisciplinary AAA screening co-ordinating group and that all pertinent staff groups are included in annual meetings.</td>
</tr>
</tbody>
</table>
**Standard 2 – Audit**

2a.1 NHS board/collaborative vascular services submit minimum local datasets to their assigned screening centre.

**Findings**
The review group found that minimum datasets are being collected. However, two data collection systems are available and they are not reconciled. This may impact on the integrity of the data collected.

- The screening programme does collect vascular outcome data, but two databases are used: the UK wide National Vascular Registry and the AAA IT system (which contains a bespoke data capture module). Unfortunately, these data sources are not reconciled.
- An area of concern is that while there should be identical data on both systems, the presence of both may cause confusion, or compromise confidence in the data held.
- In order to fully understand the quality and performance of units, all AAA activity should be recorded and considered. Monitoring of the outcomes of intervention for screened aneurysms alone would not provide sufficient numbers for meaningful analysis of outcomes within a single unit. This means that screen-detected AAA repairs and all other AAA repairs performed in a unit should be considered as a total.

2a.2 Each screening centre submits a minimum dataset to Information Services Division Scotland.

**Findings**
The review group found that all local programmes submit a minimum data set.

- NSS’ evidence demonstrated compliance against this standard.
- A minimum data set is recorded and can be found on the Information Services Division website: [www.isdscotland.org/Health-Topics/Public-Health/AAA-Screening/](http://www.isdscotland.org/Health-Topics/Public-Health/AAA-Screening/)

2a.3 Information Services Division Scotland provides annual reports on key performance indicators (including 1-year survival rates) nationally to all AAA screening programme service providers to facilitate comparative reporting and feedback.

**Findings**
The review group found that key performance indicator data is provided on an annual basis to the national governance structure for the programme and to local programmes.

- Information Services Division provides annual reports on key performance indicator data.
- An annual report for the programme has been published and can be found on Information Services Division website: [www.isdscotland.org/Health-Topics/Public-Health/Publications/2017-03-07/2017-03-07-AAA-Publication-Report.pdf](http://www.isdscotland.org/Health-Topics/Public-Health/Publications/2017-03-07/2017-03-07-AAA-Publication-Report.pdf)
Recommendation for Standard 2

The national AAA screening programme:
- The National Vascular Registry and the NHS National Services Scotland system should be aligned and all AAA cases entered onto the registry to ensure that total outcomes (screen and non-screen detected) can be monitored by the programmes.

Standard 3 – Communication and support

3a.1 All men invited for AAA screening are provided with standardised information. This will outline the benefits and risks of screening, and the significance of both positive and negative screening test results.

Findings
The review group found that all local programmes have defined arrangements to provide standardised information.
- NHS Health Scotland provides national information for the screening programme, which includes leaflets and posters. Since national coverage was achieved (November 2013), a review of participant information has taken place and this has resulted in improvements being made.
- The information leaflets include the risks and benefits of screening, and are mindful of the importance of providing balanced information about screening.

3a.2 Information is made available in different formats appropriate to the needs of the target population.

Findings
The review group found that all local programmes provide appropriate information, and current innovative practice should be cascaded across all screening programmes.
- There is national compliance against this criterion as standardised leaflets are available in four different languages and a large print version. These can be requested by participants by contacting local call/recall offices or by accessing the NHS Inform website, which was mentioned in participants’ invite letters.
- From the data submitted against this criterion, the review group found a level of compliance against this criterion. However, there are some variances across local programmes. Some local programmes can demonstrate real innovation with their information for groups within the target population, specifically those who are visually or hearing impaired and carers of members of the eligible population.
- One of the starkest variances within local approaches to communications is the advice for men who had been identified as having an aneurysm and the implications for their brothers, as incidence is higher for those who have a close familial link with someone who already has an aneurysm. NHS Grampian, NHS Orkney and NHS Shetland collaborative, NHS Fife and NHS Tayside collaborative, and NHS Ayrshire & Arran all demonstrated innovation in this area.
- There is an opportunity for the national programme to share examples of good practice and reduce the variation in standard of local communications across the programme. The review group agreed that a standardised approach to information
should be taken, in particular information about familial links which is not currently part of the national programme. A forum should also be established so that local ideas and initiatives can be considered and shared. This could be extended across other screening programmes.

3a.3 Mechanisms are in place to monitor, evaluate and improve the effectiveness of communication between healthcare staff and service users.

Findings
The review group found that all programmes meet this criterion at a minimum level and require support to share good practice as some local programmes are undertaking really innovative approaches to try to improve communication with participants.

- There was a lack of consistency in regards to the approach taken to meet this criterion across local programmes.
- While some local programmes have held lead screeners communication days, study days, and training around specific communication barriers, others failed to demonstrate that they had taken any action to meet this criterion.
- NHS Highland and NHS Western Isles collaborative demonstrated good practice by holding an AAA study day for clinical staff at Raigmore Hospital whilst others, including NHS Ayrshire & Arran, NHS Greater Glasgow and Clyde, NHS Lanarkshire, and NHS Lothian and NHS Borders collaborative, canvassed the opinions of service users through questionnaires.

3a.4 Patient information material is reviewed at least every 3 years.

Findings
The review group found that patient information has been reviewed.

- During 2016, NHS Health Scotland carried out a national review and made improvements to materials.

3b.1 Support needs of individuals are identified and addressed.

Findings
The review group found that all local programmes have defined arrangements to meet this criterion.

- All local programmes are compliant at a minimal level. All local programmes provide exceptional access protocols, however some are more wide-ranging than others in ensuring access to screening.
- An example of good practice was identified by the review group: NHS Grampian, NHS Orkney and NHS Shetland collaborative has published guidance for call/recall users giving information on the range of factors to be considered when dealing with and processing enquiries from members of the public.
3b.2 There is a practitioner who is available to provide support to individuals at the time of the screening episode and during the surveillance period.

Findings
The review group found that all local programmes have defined arrangements to meet this criterion but some clinics operate with one screener, rather than two.

- Some clinics are delivered by one screener, rather than two as stipulated within the national AAA screening programme Standard Operating Procedures (SOP).
- Whilst it is understood that there could be valid reasons for this, chaperoning staff should be available for all clinics and assistant practitioners should have access to, and be supported by sonography expertise during clinics.
- The review group recognise that the recommendation within the SOP has been made to ensure that assistant practitioner screeners are professionally supported, adequate time can be afforded to participants, and to reduce the risk of repetitive strain injury arising from continuous scanning.

Recommendation for Standard 3

Local AAA screening programmes (NHS boards/collaboratives):
- Where only one practitioner delivers a clinic, a full and robust risk assessment should be carried out with regular review of this arrangement. Assistant practitioners should ensure they have sonography support during clinics, and all clinics should have access to chaperones if required.

Standard 4 – Participant eligibility

4a.1 A minimum of 90% of men in their 65th year are sent their first invitation for screening before their 66th birthday.

Findings
The review group found that not all local programmes were meeting this criterion. Seven out of the nine programmes met the target for the reporting period but did provide action plans to demonstrate how they would make improvements.

- When local programmes implemented the screening programme, the eligible cohort for screening was populated into the IT system and this included all men who were 65 years old at that time, not all men who turned 65 on that day. This led to a backlog of demand developing in some areas and local programmes have worked hard to achieve a ‘normal level’ of eligible participants entering the programme.
- Two local programmes did not meet the target set out in the criterion: NHS Highland and NHS Western Isles collaborative, and NHS Lanarkshire.
- NHS Highland and NHS Western Isles collaborative has clarified that this was as a result of staffing issues, in particular recruitment and training. Following the publication of this report, an action plan will be submitted to Healthcare Improvement Scotland and provide an update on the situation.
- NHS Lanarkshire has articulated that work has been undertaken to address this issue. The NHS board expects that it will soon meet the target and reach a ‘normal level’. Following the publication of this report, an action plan will be submitted to Healthcare Improvement Scotland to provide an update on the situation.
• NSS confirmed that the national AAA screening programme is monitoring the situation and is confident that both programmes will meet the target by the next key performance indicator reporting round.

• Both of the programmes are likely to meet the target during this year.

4a.2 There is a protocol for the management of non-attendees, both those who fail to attend appointments and those who actively opt out of the screening programme, taking into account patient choice and responsibility for their care.

Findings
The review group found that there were defined arrangements to meet this criterion and there is national compliance against this standard due to the existence of national processes for the management of non-attendees.

• A number of local programmes have provided evidence that work has been undertaken to consider why men do not accept the offer of screening.

• There are significant areas of good practice which should be considered by other local programmes in Scotland. NHS Highland and NHS Western Isles collaborative has undertaken a great deal of work to understand why participants failed to attend screening appointments and address any issues identified. The review group commended the collaborative and noted that NHS Ayrshire & Arran has undertaken similar pieces of work.

4b.1 A minimum of 90% of men with a screen-detected small or medium aneurysm attend for surveillance on an annual or quarterly basis, as appropriate.

Findings
The review group found that all local programmes have defined arrangements in place to meet this criterion and follow up men with a detected aneurysm.

• Men who have an identified disease process are being appropriately followed up in the programme through regular scheduled screening surveillance appointments.

4b.2 There are failsafe protocols to ensure that all men with a screen-detected small or medium aneurysm, requiring surveillance, are included in the recall system.

Findings
The review group found that all local programmes have defined arrangements to meet this criterion to ensure call/recall protocols are in place for men with a detected aneurysm.

• There is compliance with this standard for all local programmes as call/recall protocols are in place and are monitored through relevant groups within the AAA screening governance structure.
Recommendations for Standard 4

The national AAA screening programme:
- The work of NHS Highland and NHS Western Isles collaborative and NHS Ayrshire & Arran in reducing non-attendance should be shared across local programmes through relevant national governance groups (the monitoring and evaluation group and any sharing practice groups).

Local AAA screening programmes (NHS boards/collaboratives):
- NHS Highland and NHS Western Isles collaborative and NHS Lanarkshire should submit an update, against criteria 4a.1, 3 months following the publication of this report. If the target is not met then an action plan for improvement should also be submitted.

Standard 5 – Screening uptake

5a.1 A minimum of 70% of men invited for AAA screening are tested.

Findings
The review group found that all local programmes have defined arrangements to meet this criterion and ensure a minimum of 70% of men invited for AAA screening are tested.

- The national data submitted by NSS demonstrates that this criterion was being regularly exceeded with a national uptake rate of 84% for the period 2015–2016.
- Although there is a demonstrable high uptake across local AAA screening programmes, it has been reported that there are known issues with uptake of screening in lower socioeconomic groups.8
- The national programme should continue to work hard to ensure parity of access to screening for the eligible population in Scotland, particularly as those in lower socioeconomic groups may be at a higher risk of vascular disease and of developing an aneurysm.9
- The national evidence from NSS has indicated that NHS board consultants in public health have monitored this data and are considering ways to promote the programme amongst eligible participants within lower socioeconomic groups, within the boundaries of informed choice.
- Local programmes included ‘hard to reach’ strategies within the evidence submitted and this has demonstrated some innovative approaches to the delivery of local programmes in order to increase access and uptake. Good practice was identified in NHS Ayrshire & Arran which has a protocol to communicate with residents who are deaf or whose first language is not English. NHS Ayrshire & Arran also runs outreach clinics in two community hospitals within its boundaries.

8 Screening and Inequalities Report, NHS Health Scotland 2017
9 www.isdscotland.org/Health-Topics/Heart-Disease/Publications/2017-02-21/2017-02-21-Heart-Disease-Report.pdf
NSS evidence demonstrated that the IT call/recall system has been changed to ensure that transgender people are included within the eligible population, which the review group commended. This is very important for individuals who have been born male but transitioned to female as hormone therapy does not reduce the risk of AAA and thus the incidence and risk for an individual is unchanged.

5a.2 There is a protocol for the self-referral of men to the AAA screening test.

Findings
The review group found that all local programmes have defined arrangements to meet this criterion and support the self-referral of men to the AAA screening test.

- There are robust protocols at a national level to allow men to self-refer into the programme and there are also local protocols for the scheduling and management of this cohort which improves local efficiencies. For example, most local programmes have protocols which offer self-referrals and late notice cancellation appointments and this works well, maximising attendance at clinics, reducing wasted appointments and efficiently managing the self-referring cohort of participants.
- The national programme can demonstrate that all local programmes are receiving regular referrals, which often spike after periods of local media reporting about the programme.
- Despite the non-existence of direct marketing materials about the option to self-refer, the programme continues to see men approach local programmes for a self-referral appointment.
- The national programme is considering a national campaign to publicise self-referral to the screening test.

Recommendations for Standard 5

There were no recommendations made for Standard 5.

Standard 6 – The AAA screening examination

6a.1 All screening staff to provide evidence of competency to deliver scans.

Findings
The review group found that all local programmes have defined arrangements to meet this criterion and provide evidence of competency to deliver scans.

- All local programmes submitted evidence that screeners working within programmes have attained accreditation from Glasgow Caledonian University.
- A number of local programmes have held additional AAA screening days to educate screeners in all areas relating to the screening episode, for example informed consent and communication. These are led and championed by lead screeners.
6a.2 All screening staff undertake an ongoing quality assurance process to ensure skills and competencies remain at a high level.

Findings
The review group found that all local programmes have defined arrangements to meet this criterion at a basic level, in that all programmes are undertaking quality assurance of screeners. However, the review group found variances in the rates of failed images which should be investigated further.

- Evidence submitted to the review group showed there have been significant variances in the rates of images which failed quality assurance (QA) tests by lead screeners. The levels of variation are of concern to the review group, although no specific evidence of issues relating to variance was provided. It is essential that this is fully understood as it may impact on the quality of the screening programme.

- The review group acknowledge the importance of QA testing of images and the risks of not undertaking robust and regular QA. As a result it is recommended that local programmes ensure that lead screeners have the time to undertake these functions.

- The levels of variance reported through data submitted to the review group should be considered by relevant groups within the national AAA screening structure and a quality management and improvement programme should be developed, focusing specifically on this issue.

- Although there is variance in terms of QA data, the review group found it was being used in areas to regularly monitor quality and improvement. One example found that images which failed the QA process allowed a clinic where lighting was poor to be spotted by the programme and this was addressed, leading to improved testing.

- Consideration may be given to the ‘variance’ element by including this in the SOPs.

6b.1 All men undergoing AAA screening have a minimum of two static sonographic images recorded and stored.

Findings
The review group found that at a national level, all the local programmes met this criterion.

- The AAA IT call/recall system records two images for each episode and has mechanisms in place to ensure this.

- Whilst evidence provided by local programmes did show there were rare instances where a failure to capture images took place, these were considered and resolved, with most happening in the early days of the screening programme.
6b.2 There is a quality assurance process demonstrating that images are accurately interpreted.

Findings
The review group found that all local programmes met this criterion. However, quality assurance processes should be strengthened and consideration given to variance across local programmes.

- An audit tool is being considered by the national programme to demonstrate and further encourage standardisation of interpretation of images.
- Although QA functions are being undertaken by lead screeners, these processes should be reviewed and strengthened by the national programme.
- The wording of this criterion should be considered during the next review of the national clinical standards as it could be integrated with Criterion 6a.2.
- Most local programmes have identified resource and capacity issues within screening teams. In particular, lead screeners may not be fully resourced to undertake the functions of the role. This was identified as a particular challenge for the programme by the review group and a recommendation made under Criterion 6a.2 may address this.

6b.3 Where the aorta cannot be visualised at the screening clinic, a further scan is arranged.

Findings
The review group found that all local programmes met this criterion. However, the group noted that all local programmes go beyond the participant pathway, using vascular departments, to try to obtain a scan of the aorta.

- There is a national standardised process for the recall of men whose aorta cannot be visualised. A secondary scan appointment is provided, however, if the aorta cannot be visualised at the second appointment, the men are discharged from the programme.
- Although men who have two ‘fail to scan’ appointments are discharged from the national programme, local clinical leads have developed protocols to offer further scanning. In fact, almost every local programme has sought to ensure that all efforts are made to undertake a successful screening test.
- For men who do receive a successful test following discharge from the national programme, their GP is informed in line with standard screening protocols. However, this is not resourced by the national programme. Governance groups within the programme are invited to consider the impact this may have on local vascular units.

6b.4 Internal quality control procedures for ultrasound equipment are undertaken and documented.

Findings
The review group found that all local programmes met the criterion to conduct quality control of ultrasound equipment.

- Every local programme submitted evidence of compliance against this criterion.
- The next procurement of ultrasound machines for this screening programme is being considered. This has previously been undertaken nationally and as a result secured a significant discount for NHSScotland. The review group acknowledge this is being
considered by the lead screeners group and the lead clinicians group. The review group is supportive of this being led at a national level in order to secure the best possible deal for NHSScotland.

6c.1 A minimum of 97% of men undergoing the AAA screening test receive a provisional verbal screening test result (either positive or negative) and standardised patient information at the time of the screening episode.

Findings
The review group found that at a national level, all the local programmes met this criterion.
- The review group recognise that this is a difficult standard for local programmes to provide evidence against.
- From the evidence submitted, local programmes do have protocols for false positive or negative results and take steps to ensure that men are informed of this immediately.

6c.2 All men are sent written confirmation of the screening test result within 20 working days of the scan being completed. A copy of the letter for positive results only will be provided to the patient’s GP. Targeted supplementary patient information is provided, as appropriate.

Findings
The review group found that at a national level, all the local programmes met this criterion.
- Letters are sent from a centralised system. There are quality assurance processes to ensure that letters are received from the call/recall AAA IT system to the mail service responsible for sending the letters and that the correct numbers of letters are sent.
- There is also a manual workaround for a known IT issue relating to mailers arising from screening episodes. Recommendations which would help to address this have been noted under Criterion 1a.2.

Recommendations for Standard 6

<table>
<thead>
<tr>
<th>The national AAA screening programme:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The national programme should undertake a quality assurance management and improvement programme. This should include a review of variance within the quality assurance of images and should be monitored on a regular basis.</td>
</tr>
<tr>
<td>- National governance groups within the AAA screening programme should consider the resource impact on vascular units due to the referral of men whose aorta cannot be visualised during a screening episode.</td>
</tr>
</tbody>
</table>
Standard 7 – Screening outcomes

7a.1 The screening and surveillance history of men, who died of a ruptured aortic aneurysm, is reviewed and discussed by the collaborative screening centre multidisciplinary team.

Findings
The review group found that only one out of the nine local programmes met this criterion.

- NHS Highland and NHS Western Isles collaborative has a AAA screening governance group which undertakes a process whereby every instance of a ruptured aortic aneurysm is looked at and cross referenced with the local screening programme. This allows the local programme to identify whether the male was known to the programme and to consider images associated with their last screening episode.
- Other local programmes stated that this should be addressed nationally. The review group believe that this shows a lack of understanding about the criterion and their role in determining whether ruptures could have been prevented or if false negatives had occurred.
- The review group noted that there is no key performance indicator for this criterion which governance groups could monitor.

7a.2 The mortality rate due to ruptured abdominal aneurysm among men who were screened negative and discharged from the programme is recorded and an action plan implemented.

Findings
The review group found that one out of the nine local programmes met this criterion.

- Only NHS Highland and NHS Western Isles collaborative collate and consider data about people who have been screened but subsequently die of a ruptured abdominal aneurysm. The review team acknowledge that there are challenges in collating this information, as it could be captured in death certificates but this can be unreliable. It was reported that other national screening programmes in Scotland do consider National Records of Scotland (NRS) data and the group agreed that this should be adopted within the AAA screening programme.
- Given the implications related to quality, both criteria 7a.1 and 7a.2 should be reworded to include men who have a ruptured abdominal aneurysm and survive. This would ensure that learning is captured for all ruptures, and not only from those who have died of rupture.
### Recommendations for Standard 7

**The national AAA screening programme:**
- The national programme, in particular the monitoring and evaluation group, should consider the methodology used by NHS Highland and NHS Western Isles collaborative as a matter of urgency and consider rolling out the learning from this across all local programmes.
- At the next review of the Clinical Standards for the AAA Screening Programme, Standard 7 should be considered with a view to including men who have survived, or died from, a ruptured abdominal aneurysm.

**Local AAA screening programmes (NHS boards/collaboratives):**
- Local programmes should undertake work as a matter of urgency to meet Standard 7, considering National Records of Scotland data to identify men who may have died of a ruptured abdominal aneurysm in order to establish whether they were known to the screening programme.

### Standard 8 – Referral and assessment

**8a.1 All men with a screen-detected aneurysm of ≥ 55 mm are referred to a designated unit for assessment within 3 working days of the scan.**

**Findings**
The review group found that at a national level, all the local programmes met this criterion.
- There is a national process in place to ensure that men are referred within 3 working days of a scan taking place. This is undertaken using an automatic process within the national call/recall AAA IT system.
- A number of local protocols are used in local programmes to ensure referrals are followed up, as part of a failsafe approach, and this is commended.

**8a.2 A minimum of 75% of men with a screen-detected aneurysm of ≥ 55 mm are seen by a vascular specialist within 10 working days of referral.**

**Findings**
The review group found that seven out of the nine local programmes have met this criterion (period ending February 2017).
- During the review group’s initial analysis, only two out of the nine local programmes were meeting this criterion over the reporting period ending March 2016. This led the review group to write to local programmes requesting the most up-to-date position against this criterion as the group was informed that compliance was improving.
- From the evidence provided within the self-assessment, and then the subsequent data provided after local programmes were asked to submit up-to-date status reports, the review group found that the local programmes which had not been meeting the target had worked hard to resolve the issue. Many local programmes demonstrated that they have looked at the reasons why they were unable to see men within 10 days of referral and have undertaken steps to improve.
- NHS Lothian and NHS Borders collaborative provided what they described as local data to demonstrate that they were close to meeting the target. However, the review group recommend that the local programme use national, verified data to monitor performance in this area. The review group was satisfied that the action plan provided would lead to the programme meeting this target imminently. This should be monitored by the national AAA screening programme governance structure.

- Although most of the local programmes are now meeting this criterion, NHS Dumfries & Galloway has not yet been able to do so. The NHS board has an arrangement with the vascular service based within North Cumbria University Hospitals Trust, who receive screen detected patients from Dumfries and Galloway.

- The evidence suggested limited information sharing, a lack of robust clinical governance arrangements and quality monitoring between NHS Dumfries & Galloway and the Carlisle service.

**Recommendations for Standard 8**

<table>
<thead>
<tr>
<th>The national AAA screening programme:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The national monitoring and evaluation group should monitor NHS Lothian and NHS Borders collaborative and NHS Dumfries &amp; Galloway against <strong>Criterion 8a.2</strong>.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Local AAA screening programmes (NHS boards/collaboratives):</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHS Dumfries &amp; Galloway should consider the governance arrangements, data flow and communication between their local vascular team, the local screening programme and the Carlisle service, and take appropriate steps to strengthen them if required.</td>
</tr>
</tbody>
</table>

**Standard 9 – Pre and post operative management**

9a.1 There is a 24/7 on-call rota for vascular emergencies covered by consultant vascular surgeons.

**Findings**

The review group found that at a national level, all the local programmes met this criterion and that vascular emergencies are planned for via on-call rota.

- Each of the local programmes submitted evidence which provided accounts of the rotas.
9a.2 There is a critical care facility with the ability to undertake mechanical ventilation and renal support, and with 24-hour on-site anaesthetic cover.

Findings
The review group found that at a national level, all the local programmes met this criterion. However, the provision of critical care facilities in two of the nine local programmes should be considered to ensure they continue to meet this criterion.

- While there appeared to be compliance against this criterion, there were some slight evidence gaps. Critical care facilities and cover were not fully described by NHS Dumfries & Galloway or NHS Ayrshire & Arran, although they have indicated compliance.

9a.3 Units receiving referrals from the AAA screening programme undertake a minimum of 20 elective interventions each year.

Findings
The review group found that eight out of the nine local programmes vascular centres is meeting the target.

- The review group recognise that this criterion is intended to ensure that units are undertaking enough procedures to ensure that skills and competencies are maintained. This is often referred to as a volume and outcome relationship.
- Whilst NHS Lanarkshire is undertaking more than 20 procedures each year, the NHS board is not entering vascular AAA data onto the national vascular database which would allow them to monitor outcomes for all AAA patients in their care.
- While most units receiving screen-detected AAA patients are undertaking 20 or more procedures each year, NHS Ayrshire & Arran is not.
- The review group is concerned that NHS Ayrshire & Arran is undertaking treatment for approximately seven referrals each year, which is far below the number in the Scottish AAA screening standard and even lower than the current standard outlined in the 2015 Vascular Society of Great Britain and Ireland standards which recommend that a unit undertakes no fewer than 60 AAA procedures (elective and emergency) each year.
- Given the low throughput of patients within NHS Ayrshire & Arran, the review group would expect that the AAA monitoring and evaluation group would continue to closely monitor this situation.
- Collecting outcome data for both screen-detected and non-screen detected AAA patients is vital in understanding and monitoring the quality of services and the review group recommend that this data should be considered by the AAA monitoring and evaluation group on an ongoing basis.

9a.4 All units will offer open repair and endovascular aneurysm repair (EVAR).

Findings
The review group found that at a national level, all the programmes met this criterion.

- There is compliance in terms of access to open repair or EVAR. However, timely access to both methods of repair is an issue for some programmes. In particular, cross-boundary referral to units internal to Scotland for EVAR appears to contribute to delays.
The review found that NHS Ayrshire & Arran was experiencing delays because of issues with access to EVAR undertaken in NHS Lanarkshire. A service level agreement has been established which formalises set sessional time for NHS Ayrshire & Arran patients to have EVAR undertaken within NHS Lanarkshire. It is expected that this will stop delays in treatment happening.

9b.1 All patients being assessed for elective surgery undergo a pre-operative multidisciplinary team assessment to determine their suitability for open repair or endovascular aneurysm repair intervention.

Findings
The review group agreed that there are defined arrangements to meet this criterion but that it should be closely monitored by the lead clinicians group going forward.

- While there appears to be compliance against this criterion across Scotland, the evidence submitted was not consistent.
- It is suggested that this criterion be closely monitored within the national AAA screening governance structure.

9b.2 A minimum of 60% of patients with a screen-detected aneurysm ≥55mm deemed appropriate for intervention are operated on by a vascular specialist within 40 working days of referral – Key Performance Indicator 3.2.

Findings
The review group found that six out of the nine local programmes are meeting this criterion (period ending February 2017).

- During the review it was evident that not all local programmes were meeting this criterion over the reporting period. This led the review group to write to local programmes requesting the most up-to-date position against this criterion.
- This is a particularly important standard for men who have an AAA, as timely treatment is very important, particularly as the risk of rupture increases with the size of an aneurysm.
- This criterion had not been consistently met since the implementation of the screening programme by most local programmes. In addition to the national evidence submitted, this had been evident to governance groups for some time with little apparent action for improvement taking place.
- Some of the evidence submitted by clinical leads suggests that little action had been undertaken to address the issues until August 2016.
- NHS Ayrshire & Arran data submissions demonstrated that the NHS board is not meeting this target, despite formalisation of a referral pathway into NHS Lanarkshire for treatment.
- NHS Lothian and NHS Borders collaborative cited patient choice with regards to those who waited longer for treatment. While the programme is now meeting this target, the review group felt that the standard target allows for patient choice. It is also not replicated in other local programmes. Therefore, the review group recommend that this is closely monitored going forward.
- NHS Fife and NHS Tayside collaborative is not meeting this target as none (0%) of the participants from the NHS Fife board area accessed intervention/treatment within 40 working days during 2016–2017.
- NHS Lanarkshire was considering the issues relating to the criterion and why this target was not being met. However, the review group found that this work had only recently started despite the issue being known about for some time. While the review group welcome the improvement work taking place, there is concern that evidence suggests that there is an over-reliance on the national governance structures.

**Recommendations for Standard 9**

<table>
<thead>
<tr>
<th>The national AAA screening programme:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The lead clinicians governance group should monitor:</td>
</tr>
<tr>
<td>o whether <strong>Criterion 9a.2</strong> is being met by NHS Dumfries &amp; Galloway and NHS Ayrshire &amp; Arran</td>
</tr>
<tr>
<td>o the volume of procedures undertaken in NHS Ayrshire &amp; Arran and whether referral into the unit is appropriate</td>
</tr>
<tr>
<td>o the numbers of elective procedures undertaken every year – this should be monitored by the group on an ongoing basis</td>
</tr>
<tr>
<td>o the multidisciplinary team process prior to treatment, and</td>
</tr>
<tr>
<td>o the NHS Fife review of patient flow in relation to time to treat.</td>
</tr>
<tr>
<td>• Collective rates of mortality for screened and non-screened repair, annual repair numbers and all other data pertinent to the demonstration of <strong>standards 8 to 10</strong> should be monitored and considered by the lead clinicians governance group and the monitoring and evaluation group. This monitoring should keep in mind the findings of the Scottish Vascular Review (2010), the Vascular Society Standards (2015) and screening policy in the other three UK nations.</td>
</tr>
<tr>
<td>• The AAA screening programme governance structure should consider data against both <strong>criterion 8a.2 and 9b.2</strong>, rerouting referral pathways if required.</td>
</tr>
<tr>
<td>• The national AAA screening programme governance group should consider current arrangements for the ongoing monitoring of screening services, in particular referral pathways.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Local AAA screening programmes (NHS boards/collaboratives):</th>
</tr>
</thead>
<tbody>
<tr>
<td>• NHS Ayrshire &amp; Arran should ensure that relevant governance groups seek further clarity and assurance on:</td>
</tr>
<tr>
<td>o the patient flow within the screening service</td>
</tr>
<tr>
<td>o the clinic pathways</td>
</tr>
<tr>
<td>o staffing issues within the vascular service</td>
</tr>
<tr>
<td>o governance arrangements, and</td>
</tr>
<tr>
<td>o communication systems.</td>
</tr>
<tr>
<td>• NHS Lothian and NHS Borders collaborative should monitor verified national data closely, in particular those which do not meet this target as a result of patient choice.</td>
</tr>
<tr>
<td>• NHS Fife and NHS Tayside collaborative should utilise appropriate governance groups to review, as a matter of urgency, the issue of patient flow in relation to time to treatment. These groups should also closely monitor the patient pathway</td>
</tr>
</tbody>
</table>
for patients requiring intervention in order to mitigate against any patient being put at a disadvantage.

- NHS Lanarkshire should consider how to strengthen governance systems and monitor improvement action plans for its local programme.

### Standard 10 – Post operative outcomes

10a.1 The 30-day mortality rate following elective open repair or endovascular aneurysm repair is recorded and actions identified and implemented by the NHS board/collaborative multidisciplinary team.

#### Findings

The review group found that evidence provided by local programmes indicated that this criterion was not fully met because of the use of two databases to record outcomes. Whilst some clinical leads indicated that this data is recorded, no evidence was submitted to confirm this.

- Standard 10 is the responsibility of the clinical lead and the importance of the standard should not be underestimated in terms of demonstrating quality, safety and good practice.
- The recording of screen and non-screen detected mortality could assist in monitoring the performance and quality of the programme. This would provide an accurate account of quality within a unit and would provide assurances that a referral pathway was safe.
- The use of the National Vascular Registry will fully support the ongoing quality monitoring of services for the AAA screening programme. The review group felt strongly that all AAA repairs in Scotland should be entered onto the registry for the purposes of robust and effective governance and that this should be recommended. The use of the registry will support local governance and quality monitoring groups, who should be meeting regularly to consider data against all of the standards and not just 30-day mortality.

#### Recommendations for Standard 10

**The national AAA screening programme:**

- For the purposes of good governance, all AAA repair data should be entered onto the National Vascular Registry. This data should be considered by the national programme, who should be aware that it should include non-screen detected cases.
- Clinical leads and pertinent AAA governance groups should consider 30-day mortality data on a regular basis.

**Local AAA screening programmes (NHS boards/collaboratives):**

- Local governance groups should regularly meet to consider screening pathway data, including 30-day mortality data, placing importance on treatment and outcome data. Any issues arising from this data should be escalated when required to the responsible officer.
- Medical directors, chief executives and directors of public health should regularly seek assurances that outcome data from vascular treatment is sought, considered and action taken when required by local governance groups.
- NHS Lanarkshire should use the National Vascular Registry to record and collate mortality data arising from all AAA repairs.
Appendix 1: AAA screening detailed participant pathway
## Appendix 2: Review group membership

<table>
<thead>
<tr>
<th>Name</th>
<th>Job title</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tim Lees (Chair)</td>
<td>Consultant Vascular Surgeon</td>
<td>Newcastle upon Tyne Hospitals NHS Trust</td>
</tr>
<tr>
<td>Professor Julie Brittenden</td>
<td>Vascular Consultant</td>
<td>NHS Greater Glasgow and Clyde</td>
</tr>
<tr>
<td>Margaret Bruce</td>
<td>Call/Recall Manager</td>
<td>NHS Grampian</td>
</tr>
<tr>
<td>Professor John Duncan</td>
<td>Clinical Lead/Vascular Consultant</td>
<td>NHS Highland</td>
</tr>
<tr>
<td>Gillian Forsyth</td>
<td>Administration Manager – Primary Care acting as</td>
<td>NHS Lanarkshire</td>
</tr>
<tr>
<td></td>
<td>representative of Call/Recall Manager coordinator</td>
<td></td>
</tr>
<tr>
<td>Tim Hartshorne</td>
<td>Chief Clinical Vascular Scientist</td>
<td>University Hospital of Leicester NHS Trust</td>
</tr>
<tr>
<td>Sue Payne (Vice-chair)</td>
<td>Public Health Consultant</td>
<td>Scottish Government</td>
</tr>
<tr>
<td>Susan Siegel</td>
<td>Public Partner</td>
<td>Healthcare Improvement Scotland</td>
</tr>
<tr>
<td>Ian Smith</td>
<td>Senior Inspector</td>
<td>Healthcare Improvement Scotland</td>
</tr>
<tr>
<td>Carine Stirling</td>
<td>Sonographer</td>
<td>NHS Greater Glasgow and Clyde</td>
</tr>
<tr>
<td>Lisa Summers</td>
<td>Programme Manager</td>
<td>Public Health England</td>
</tr>
<tr>
<td>Judith Tait</td>
<td>Data Analyst</td>
<td>Public Health and Intelligence, NSS</td>
</tr>
<tr>
<td>Fraser Tweedie</td>
<td>Public Partner</td>
<td>Healthcare Improvement Scotland</td>
</tr>
<tr>
<td>Jane Walker</td>
<td>Radiology Consultant</td>
<td>NHS Lothian</td>
</tr>
</tbody>
</table>

### Healthcare Improvement Scotland project team

<table>
<thead>
<tr>
<th>Name</th>
<th>Job title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belinda Henshaw</td>
<td>Senior Programme Manager</td>
</tr>
<tr>
<td>Uzma Aslam</td>
<td>Programme Manager</td>
</tr>
<tr>
<td>Liam Meehan</td>
<td>Programme Manager</td>
</tr>
<tr>
<td>Orlagh Sheils</td>
<td>Project Officer</td>
</tr>
<tr>
<td>Kat Wilkinson</td>
<td>Project Officer</td>
</tr>
<tr>
<td>Margaret McAlees</td>
<td>Administrative Officer</td>
</tr>
</tbody>
</table>
Appendix 3: Key recommendations

The review group set out a number of recommendations for local programmes and the national overarching programme to help to improve the quality/sustainability and the wider governance arrangements for the AAA screening programme in Scotland. The context for the recommendations listed below is detailed in the report.

While the recommendations are specific to this review, they should be addressed using improvement methodology and applied where appropriate, across other Scottish screening programmes. The responsible NHS boards/collaboratives should consider these recommendations within their local clinical community.

**Standard 1: Governance arrangements**

**Essential criteria 1.a1 – 1.b3**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1a.1</strong> Collaborative screening centre</td>
<td>There are clearly defined arrangements for managing the AAA screening service within each collaborative screening centre, with clear lines of accountability to NHS boards/collaboratives.</td>
</tr>
<tr>
<td><strong>1a.2</strong> NHS board/collaborative</td>
<td>Processes within the AAA screening programme are reviewed, and any areas in the programme which require improvement are identified and addressed.</td>
</tr>
<tr>
<td><strong>1a.3</strong> NHS board/collaborative</td>
<td>There is a designated consultant in public health medicine or registered specialist in public health acting as the AAA screening co-ordinator for the NHS board/collaborative.</td>
</tr>
<tr>
<td><strong>1a.4</strong> NHS board/collaborative</td>
<td>There is a designated lead clinician for each NHS board/collaborative.</td>
</tr>
<tr>
<td><strong>1b.1</strong> NHS board/collaborative</td>
<td>Each NHS board/collaborative has a multidisciplinary AAA screening coordinating group, with public representation, that meets at least annually to review local performance data and address quality assurance recommendations.</td>
</tr>
<tr>
<td><strong>1b.2</strong> NHS board/collaborative</td>
<td>There is a mechanism to identify all men eligible for an invitation to attend AAA screening.</td>
</tr>
<tr>
<td><strong>1b.3</strong> NHS board/collaborative</td>
<td>There are clearly defined arrangements for the management of eligible participants in the AAA screening programme.</td>
</tr>
</tbody>
</table>

The national AAA screening programme:

- National governance groups should monitor action plans as part of their ongoing quality monitoring role.
- The national programme, through its existing governance groups/structures should consider and examine whether there is resource for public health consultants to deliver the AAA screening programme at a local level.
- National Services Division should provide clarity on the role and remit of the clinical lead.

**The Scottish Screening Committee:**
- The Scottish Screening Committee should clarify and confirm its process, role and remit, within the programmes’ governance structures, in order to provide the appropriate oversight, support and advice when risks, issues or concerns are raised or escalated.

**Local AAA screening programmes (NHS boards/collaboratives):**
- Local AAA screening programmes within NHSScotland must ensure there are robust governance and monitoring arrangements, and that chief executives are assured of the mechanisms used to govern the programme.
- Local governance committees should increase the frequency of governance meetings and regularly review action plans and annual reports in order to ensure implementation of actions for improvement.
- Public health consultants, clinical leads and lead screeners should be given time and resource to support the AAA screening governance structure fully. Local programmes should ensure that job plans include protected time to support the AAA screening programme.
- Local programmes should ensure that there is public representation on the multidisciplinary AAA screening co-ordinating group and that all pertinent staff groups are included in annual meetings.

---

**Standard 2: Audit**

**Essential criteria 2a.1 – 2a.3**

<table>
<thead>
<tr>
<th>2a.1</th>
<th>NHS board/collaborative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NHS board/collaborative vascular services submit minimum local datasets to their assigned screening centre.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2a.2</th>
<th>Collaborative screening centre</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Each screening centre submits a minimum dataset to Information Services Division Scotland.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2a.3</th>
<th>Information Services Division Scotland</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Information Services Division Scotland provides annual reports on key performance indicators (including 1-year survival rates) nationally to all AAA screening programme service providers, to facilitate comparative reporting and feedback.</td>
</tr>
</tbody>
</table>

**The national AAA screening programme:**
- The National Vascular Registry and the NHS National Services Scotland system should be aligned and all AAA cases entered onto the registry to ensure that total outcomes (screen and non-screen detected) can be monitored by the programmes.
Standard 3: Communication and support
Essential criteria 3a.1 – 3b.2

3a.1 NHS board/collaborative
All men invited for AAA screening are provided with standardised information. This will outline the benefits and risks of screening, and the significance of both positive and negative screening test results.

3a.2 NHS board/collaborative
Information is made available in different formats appropriate to the needs of the target population.

3a.3 AAA screening programme
Mechanisms are in place to monitor, evaluate and improve the effectiveness of communication between healthcare staff and service users.

3a.4 NHS Health Scotland
Patient information material is reviewed at least every 3 years.

3b.1 NHS board/collaborative
Support needs of individuals are identified and addressed.

3b.2 NHS board/collaborative
There is a practitioner who is available to provide support to individuals at the time of the screening episode and during the surveillance period.

Local AAA screening programmes (NHS boards/collaboratives):
• Where only one practitioner delivers a clinic a full and robust risk assessment should be carried out with regular review of this arrangement. Assistant practitioners should ensure they have sonography support during clinics, and all clinics should have access to chaperones if required.

Standard 4: Participant eligibility
Essential criteria 4a.1 – 4b.2

4a.1 NHS board/collaborative
A minimum of 90% of men in their 65th year are sent their first invitation for screening before their 66th birthday.

4a.2 NHS board/collaborative
There is a protocol for the management of non-attendees, both those who fail to attend appointments and those who actively opt out of the screening programme, taking into account patient choice and responsibility for their care.

4b.1 NHS board/collaborative
A minimum of 90% of men with a screen-detected small or medium aneurysm attend for surveillance on an annual or quarterly basis, as appropriate.

4b.2 NHS board/collaborative
There are failsafe protocols to ensure that all men with a screen-detected small or medium aneurysm, requiring surveillance, are included in the recall system.

The national AAA screening programme:
• The work of NHS Highland and NHS Western Isles collaborative and NHS Ayrshire & Arran in reducing non-attendance should be shared across local programmes through relevant national governance
groups (the monitoring and evaluation group and any sharing practice groups).

<table>
<thead>
<tr>
<th>Local AAA screening programmes (NHS boards/collaboratives):</th>
</tr>
</thead>
<tbody>
<tr>
<td>• NHS Highland and NHS Western Isles collaborative and NHS Lanarkshire should submit an update, against criteria 4a.1, 3 months following the publication of this report. If the target is not met then an action plan for improvement should also be submitted.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 6: The AAA screening examination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential criteria 6a.1 – 6c.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6a.1</th>
<th><strong>Collaborative screening centre</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>All screening staff provide evidence of competency to deliver scans.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6a.2</th>
<th><strong>Collaborative screening centre</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>All screening staff undertake an ongoing quality assurance process to ensure skills and competencies remain at a high level.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6b.1</th>
<th><strong>Collaborative screening centre</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>All men undergoing AAA screening have a minimum of two static sonographic images recorded and stored.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6b.2</th>
<th><strong>Collaborative screening centre</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a quality assurance process demonstrating that images are accurately interpreted.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6b.3</th>
<th><strong>Collaborative screening centre</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Where the aorta cannot be visualised at the screening clinic, a further scan is arranged.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6b.4</th>
<th><strong>AAA screening programme</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal quality control procedures for ultrasound equipment are undertaken and documented.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6c.1</th>
<th><strong>Collaborative screening centre</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>A minimum of 97% of men undergoing the AAA screening test receive a provisional verbal screening test result (either positive or negative) and standardised patient information at the time of the screening episode.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6c.2</th>
<th><strong>Collaborative screening centre</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>All men are sent written confirmation of the screening test result within 20 working days of the scan being completed. A copy of the letter for positive results only will be provided to the patient’s GP. Targeted supplementary patient information is provided, as appropriate.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The national AAA screening programme:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The national programme should undertake a quality assurance management and improvement programme. This should include a review of variance within the quality assurance of images and should be monitored on a regular basis.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6a.2 6b.2</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>6b.3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>6b.3</th>
</tr>
</thead>
</table>
### Standard 7: Screening outcomes

**Essential criteria 7a.1 – 7a.2**

#### 7a.1 The screening and surveillance history of men, who died of a ruptured aortic aneurysm, is reviewed and discussed by the collaborative screening centre multidisciplinary team.

<table>
<thead>
<tr>
<th>7a.1</th>
<th><strong>Collaborative screening centre</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The screening and surveillance history of men, who died of a ruptured aortic aneurysm, is reviewed and discussed by the collaborative screening centre multidisciplinary team.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7a.2</th>
<th><strong>Collaborative screening centre</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The mortality rate due to ruptured abdominal aneurysm among men who were screened negative and discharged from the programme is recorded and an action plan implemented.</td>
</tr>
</tbody>
</table>

#### The national AAA screening programme:

- The national programme, in particular the monitoring and evaluation group, should consider the methodology used by NHS Highland and NHS Western Isles collaborative as a matter of urgency and consider rolling out the learning from this across all local programmes.

- At the next review of the Clinical Standards for the AAA Screening Programme, Standard 7 should be considered with a view to including men who have survived, or died from, a ruptured abdominal aneurysm.

#### Local AAA screening programmes (NHS boards/collaboratives):

- Local programmes should undertake work as a matter of urgency to meet Standard 7, considering National Records of Scotland data to identify men who may have died of a ruptured abdominal aneurysm in order to establish whether they were known to the screening programme.

### Standard 8: Referral and assessment

**Essential criteria 8a.1 – 8a.2**

#### 8a.1 **NHS board/collaborative**

All men with a screen-detected aneurysm of ≥ 55 mm are referred to a designated unit for assessment within 3 working days of the scan.

#### 8a.2 **NHS board/collaborative**

A minimum of 75% of men with a screen-detected aneurysm of ≥ 55 mm are seen by a vascular specialist within 10 working days of referral.

#### The national AAA screening programme:

- The national monitoring and evaluation group should monitor NHS Lothian and NHS Borders collaborative and NHS Dumfries & Galloway against Criterion 8a.2.

#### Local AAA screening programmes (NHS boards/collaboratives):

- NHS Dumfries & Galloway should consider the governance arrangements, data flow and communication between their local vascular team, the local screening programme and the Carlisle service, and take appropriate steps to strengthen them if required.
### Standard 9: Pre and post-operative management

**Essential criteria 9a.1 – 9b.2**

<table>
<thead>
<tr>
<th>9a.1</th>
<th>NHS board/collaborative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>There is a 24/7 on-call rota for vascular emergencies covered by consultant vascular surgeons.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9a.2</th>
<th>NHS board/collaborative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>There is a critical care facility with the ability to undertake mechanical ventilation and renal support, and with 24-hour on-site anaesthetic cover.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9a.3</th>
<th>NHS board/collaborative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Units receiving referrals from the AAA screening programme undertake a minimum of 20 elective interventions each year.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9a.4</th>
<th>NHS board/collaborative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All units will offer open repair and endovascular aneurysm repair (EVAR).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9b.1</th>
<th>NHS board/collaborative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All patients being assessed for elective surgery undergo a pre-operative multidisciplinary team assessment to determine their suitability for open repair or endovascular aneurysm repair intervention.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9b.2</th>
<th>NHS board/collaborative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A minimum of 60% of patients with a screen-detected aneurysm ≥ 55 mm deemed appropriate for intervention are operated on by a vascular specialist within 40 working days of referral.</td>
</tr>
</tbody>
</table>

### The national AAA screening programme:

- The lead clinicians governance group should monitor:
  - whether **Criterion 9a.2** is being met by NHS Dumfries & Galloway and NHS Ayrshire & Arran
  - the volume of procedures undertaken in NHS Ayrshire & Arran and whether referral into the unit is appropriate
  - the numbers of elective procedures undertaken every year – this should be monitored by the group on an ongoing basis
  - the multidisciplinary team process prior to treatment, and
  - the NHS Fife review of patient flow in relation to time to treat.

- Collective rates of mortality for screened and non-screened repair, annual repair numbers and all other data pertinent to the demonstration of **standards 8 to 10** should be monitored and considered by the lead clinicians governance group and the monitoring and evaluation group. This monitoring should keep in mind the findings of the Scottish Vascular Review (2010), the Vascular Society Standards (2015) and screening policy in the other three UK nations.

- The AAA screening programme governance structure should consider data against both **criteria 8a.2 and 9b.2**, rerouting referral pathways if required.

- The national AAA screening programme governance group should consider current arrangements for the ongoing monitoring of screening services, in particular referral pathways.
### Local AAA screening programmes (NHS boards/collaboratives):
- NHS Ayrshire & Arran should ensure that relevant governance groups seek further clarity and assurance on:
  - the patient flow within the screening service
  - the clinic pathways
  - staffing issues within the vascular service
  - governance arrangements, and
  - communication systems.
- NHS Lothian and Borders collaborative should monitor verified national data closely, in particular those which do not meet this target as a result of patient choice.
- NHS Fife and NHS Tayside collaborative should utilise appropriate governance groups to review, as a matter of urgency, the issue of patient flow in relation to time to treatment. These groups should also closely monitor the patient pathway for patients requiring intervention in order to mitigate against any patient being put at a disadvantage.
- NHS Lanarkshire should consider how to strengthen governance systems and monitor improvement action plans for its local programme.

### Standard 10: Post operative outcome

#### Essential criterion 10a.1

<table>
<thead>
<tr>
<th>10a.1</th>
<th>NHS board/collaborative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The 30-day mortality rate following elective open repair or <strong>endovascular aneurysm repair</strong> is recorded and actions identified and implemented by the NHS board/collaborative multidisciplinary team.</td>
</tr>
</tbody>
</table>

#### The national AAA screening programme:
- For the purposes of good governance, all AAA repair data should be entered onto the National Vascular Registry. This data should be considered by the national programme, who should be aware that it should include non-screen detected cases.
- Clinical leads and pertinent AAA governance groups should consider 30-day mortality data on a regular basis.

#### Local AAA screening programmes (NHS boards/collaboratives):
- Local governance groups should regularly meet to consider screening pathway data, including 30-day mortality data, placing importance on treatment and outcome data. Any issues arising from this data should be escalated when required to the responsible officer.
- Medical directors, chief executives and directors of public health should regularly seek assurances that outcome data from vascular treatment is sought, considered and action taken when required by local governance groups.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NHS Lanarkshire should use the National Vascular Registry for the recording and collation of mortality data arising from all AAA repairs.</td>
</tr>
</tbody>
</table>
## Appendix 4: Glossary of terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>abdominal aortic aneurysm (AAA)</strong></td>
<td>An abnormal expansion of the aorta, which if untreated may enlarge further and rupture.</td>
</tr>
<tr>
<td><strong>call-recall</strong></td>
<td>The process used to invite people for a screening test (scan).</td>
</tr>
<tr>
<td><strong>collaborative</strong></td>
<td>NHS boards in different areas working together to provide health services.</td>
</tr>
<tr>
<td><strong>elective (surgery)</strong></td>
<td>Surgery which is not considered urgent, but which can benefit the patient.</td>
</tr>
<tr>
<td><strong>eligible</strong></td>
<td>People considered suitable to take part in a health programme or treatment.</td>
</tr>
<tr>
<td></td>
<td>For the AAA screening programme, this is all men aged 65 years and over who live in Scotland.</td>
</tr>
<tr>
<td><strong>endovascular aneurysm repair (EVAR)</strong></td>
<td>A technique to repair an aneurysm.</td>
</tr>
<tr>
<td><strong>failsafe</strong></td>
<td>A process to ensure the people receive safe and reliable care or treatment.</td>
</tr>
<tr>
<td><strong>Information Services Division (ISD)</strong></td>
<td>The part of the NHS which analyses national health data. Website address: <a href="http://www.isdscotland.org">www.isdscotland.org</a></td>
</tr>
<tr>
<td><strong>initial screen</strong></td>
<td>The first screening(s) to detect an aneurysm.</td>
</tr>
<tr>
<td><strong>negative result (from screening)</strong></td>
<td>An indication, following a test, that the condition being screened for is low-risk or not suspected in a person.</td>
</tr>
<tr>
<td><strong>offer</strong></td>
<td>A formal communication made by the screening service giving people an opportunity to be tested.</td>
</tr>
<tr>
<td><strong>open AAA repair</strong></td>
<td>An operation to replace the swollen section of the aorta with an artificial piece of artery called a graft.</td>
</tr>
<tr>
<td><strong>population</strong></td>
<td>The overall population for which a screening service is responsible.</td>
</tr>
<tr>
<td><strong>positive result (from screening)</strong></td>
<td>An indication, following a test, that the condition being screened is high-risk or suspected in a person.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>quality assurance (QA)</td>
<td>A process to ensure the delivery of high quality services.</td>
</tr>
<tr>
<td>refer</td>
<td>The process of getting a further diagnosis or specialist treatment for a person following a screen positive test result.</td>
</tr>
<tr>
<td>screener</td>
<td>A healthcare professional responsible for administering screening tests.</td>
</tr>
<tr>
<td>screening episode</td>
<td>The screening test (scan).</td>
</tr>
<tr>
<td>self-referral</td>
<td>When a patient refers himself for a service, for example a scan or treatment.</td>
</tr>
<tr>
<td>surveillance</td>
<td>When a patient’s condition is monitored over time.</td>
</tr>
<tr>
<td>uptake</td>
<td>The proportion of those offered screening who are tested. Uptake is a measure of the delivery of screening in the population to which it is offered. Low uptake might indicate that:</td>
</tr>
<tr>
<td></td>
<td>* those offered screening are not accepting the test, and/or</td>
</tr>
<tr>
<td></td>
<td>* those accepting the test are not being tested.</td>
</tr>
</tbody>
</table>
You can read and download this document from our website. We are happy to consider requests for other languages or formats. Please contact our Equality and Diversity Officer on 0141 225 6999 or email contactpublicinvolvement.his@nhs.net

www.healthcareimprovementscotland.org

Edinburgh Office: Gyle Square | 1 South Gyle Crescent | Edinburgh | EH12 9EB
Telephone: 0131 623 4300

Glasgow Office: Delta House | 50 West Nile Street | Glasgow | G1 2NP
Telephone: 0141 225 6999

The Healthcare Environment Inspectorate, Improvement Hub, Scottish Health Council, Scottish Health Technologies Group, Scottish Intercollegiate Guidelines Network (SIGN) and Scottish Medicines Consortium are part of our organisation.